ISSUES BASED ALTERNATIVES
A NEW APPROACH

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Introduction

This paper describes a process used to arrive at alternatives for a highway project based upon highway and environmental issues rather than traditional design criteria. We believe this process is more responsive to the public and agencies with a strong interest in environmental protection and resource conservation. While this process concluded with an alternative that is as acceptable to WYDOT and FHWA as an alternative developed through traditional means, we believe there was more buy-in by the non-highway agencies.

Project Information and Background

The Moran Jct. - Dubois project in Wyoming is intended to improve a portion of U.S. Highway 287/26. This section of road serves as the primary eastern gateway to Grand Teton National Park (GTNP) and the Jackson Hole area and provides local access to private and public land within the Shoshone and Bridger-Teton National Forests.

The proposed project is located in Fremont and Teton counties in northwest Wyoming. The project extends from near Moran Jct. (MP 3.01) eastward 37.7 miles to approximately west of the town of Dubois at the Shoshone National Forest boundary (MP 40.71). The roadway enters the Bridger-Teton National Forest from the west, continues for approximately .6 miles through Grand Teton National Park, and traverses the Shoshone National Forest to the eastern terminus of the project. Approximately 24 miles of U.S. 287/26 are within the Bridger-Teton National Forest and 14miles of the roadway are within the Shoshone National Forest.

The roadway currently exhibits numerous physical and operational problems that reduce the safety and capacity of the roadway. As a two-lane mountainous road, U.S. 287/26 contains steep grades, sharp curves with poor sight distances, narrow or no shoulders for safe stopping and snow storage, few turnouts and pullouts for scenic viewing or emergency stopping and few provisions for bicyclists, hikers and snowmobilers. The roadway also suffers from deteriorating and substandard-width bridges and numerous landslide areas. Accident rates are higher than average for similar roadways in the state and maintenance costs exceed typical rates. As currently constructed, the roadway does not accommodate scenic and recreational improvements proposed by the U.S. Forests Service (USFS) in the draft Scenic Byway Plan prepared for this portion of U.S. 287/26.

The purpose of these improvements as determined by the WYDOT in the Purpose and Need Statement is to: 1) Increase the safety of the road, 2) Provide sufficient capacity to accommodate projected traffic over the next 20 years, 3) Correct roadway design deficiencies , and 4) Enhance and improve the visitor experience.

Formulation and Make-up of the Interdisciplinary Team

To begin the environmental process an Interdisciplinary Team (ID Team) was formed with representatives from the Wyoming Department of Transportation (WYDOT), the U. S. Forest Service (USFS), the U.S. Fish and Wildlife Service (FWS), the National Park Service (NPS), the Wyoming Game and Fish Department (WGFD), the U.S. Army Corps of Engineers (Corp), the Federal highway Administration (FHWA), the two counties involved, and others. This ID Team was assembled to discuss project issues, review alternatives and participate in the identification of a preferred alternative. The purpose of the ID Team was to provide technical and resource information to guide the development of the project alternatives and to aid in the evaluation of those alternatives.

An agency scoping meeting was held in Jackson to announce the EIS and to solicit participation in an Interdisciplinary Team. Following this initial scoping meeting letters were sent to each participating agency requesting formal acceptance as a Cooperating Agency.

Environmental Protection Objectives

The initial task of the ID Team was to develop a set of Environmental Protection and Project Objectives that would be used to evaluate the different roadway design alternatives and eventually to select a preferred alternative. After assembling and holding group discussions the ID Team came up with the following Objectives:

1. Increase the safety of the road by providing emergency stopping areas, accommodating bicyclists, hikers and snowmobilers, minimizing conflicts with wildlife and livestock on the road and providing adequate snow storage;

2. Provide sufficient capacity to accommodate projected traffic over the next 20 years;

3. Correct roadway design deficiencies to current standards by lessening steep grades, flattening sharp curves, correcting poor sight distances, correcting narrow and/or no shoulder areas, replacing deteriorating bridges, correcting substandard bridge widths, correcting landslide areas and providing adequate pavement surface;

4. Enhance the visitor experience and the natural and human environment by providing turnouts/pullouts for recreational opportunities and scenic improvements;

5. Protect the natural and human environment by maintaining water quality, reducing erosion and improving soil stability, minimizing effects on aquatic life and maintaining stream channel stability,

minimizing impacts to cultural resources and minimizing disruption to wildlife during critical times of the year.

A preferred roadway improvement alternative also had to be consistent with adopted elements of the USFS Scenic Byway Plan and maintain consistency with the adopted Land and Resource Management Plans of the Shoshone and Bridger-Teton National Forests. A preferred alterative also had to reflect commitments made in the Memorandum of Understanding (MOU) between the USFS, WYDOT and the FHWA and in a Corridor Letter of Consent (CLOC) issued by the USFS authorizing the appropriation of any USFS lands needed to provide right-of-way (ROW).

The MOU outlined procedures to be followed in the development of the EIS, specified roles and responsibilities of the FHWA, USFS, and WYDOT in coordinating the data collection for the EIS, established the ID Team, outlined procedures to obtain concurrence in the Preferred Alternative, and issuance of a Corridor Letter of Consent by the USFS authorizing FHWA entry to USFS lands following the filing of the Record of Decision.

Public and Agency Scoping

A Notice of Intent announcing the U.S. 287/26 Environmental Impact Statement process was published in the Federal Register. A project newsletter was then mailed to approximately 500 property owners along the corridor to inform them of the EIS process. Following the mailing, a set of public information meetings was held in Dubois and Jackson, Wyoming.

In addition to the formal public involvement process, informal meetings were also held with the Fremont and Teton County Commissioners to inform them of the status of the EIS and to obtain input into the alternatives development process. Other informal meetings were held with special interest groups, private property owners and others interested in the EIS process.

Scoping Issues

Public Comments

Issues and concerns regarding the roadway improvements were expressed by the public in the public scoping meetings. Written comments and correspondence were received at the public meetings and in subsequent correspondence. The main areas of concern were focused on the following:

1. Impacts to wildlife and their habitat,
2. Safety issues,
3. Recreational issues.

In summary, issues and/or concerns expressed most frequently by the public included maintaining the rural, scenic quality of the road, wildlife protection, improving safety and accommodating winter recreation (snowmobile) usage.

Agency Comments
The primary issues and concerns expressed by federal, state, and local agencies in written and verbal responses to scoping and in the ID Team meetings included:

1. Roadway safety,
2. Wildlife impacts,
3. Recreational use and safety,
4. Visual impacts.

Summary of Main Issues/Concerns

In summary the main issues and concerns from the public and agencies were combined into four main categories:

1. Safety,
2. Wildlife,
3. Recreation,
4. Visual.

In comparing these with the original Environmental and Project Objectives there seemed to be a close fit:

1. Increase the safety of the road by providing emergency stopping areas (Safety), accommodating bicyclists (Safety and Recreation), hikers and snowmobilers (Safety and Recreation), minimizing conflicts with wildlife and livestock on the road (Wildlife) and providing adequate snow storage (Safety);

2. Provide sufficient capacity to accommodate projected traffic over the next 20 years (Safety);

3. Correct roadway design deficiencies to current standards by lessening steep grades, flattening sharp curves, correcting poor sight distances, correcting narrow and/or no shoulder areas, replacing deteriorating bridges, correcting substandard bridge widths, correcting landslide areas and providing adequate pavement surface (Safety);

4. Enhance the visitor experience and the natural and human environment by providing turnouts/pullouts for recreational opportunities and scenic improvements (Recreation);

5. Protect the natural and human environment by maintaining water quality, reducing erosion and improving soil stability, minimizing effects on aquatic life and maintaining stream channel stability, minimizing impacts to cultural resources and minimizing disruption to wildlife during critical times of the year (Visual, Wildlife).

History of Alternatives Development

The National Environmental Policy Act guidance from the Council on Environmental Quality (CEQ) and FHWA guidelines for NEPA actions requires the identification and evaluation of all reasonable alternatives and the Ano action@ alternative. Reasonable alternatives are defined by NEPA as those that are technically, environmentally and economically practical and feasible. The Draft EIS describes and evaluates a range of alternatives that are determined to be reasonable and recommends a preferred alternative. A final Preferred Alternative is selected by the Federal Highway Administration after public and agency comments are received and addressed and a final EIS is prepared. A Record of Decision (ROD) is issued after the Final EIS is reviewed. The ROD documents the final Preferred Alternative.

Traditionally, highway agency designers formulate different highway alternatives based purely on differing highway design criteria such as design speed, lane widths, shoulder widths, clear zone widths, differing alignments, etc. However, in this project the ID Team believed that in order to be more responsive to the issues and concerns raised by the scoping process, alternatives needed to be developed in response to those concerns and issues. To propose alternatives titled and based on highway design criteria in response to environmental, recreational, visual and safety concerns was not viewed as appropriate.

Alternatives Development - A New Method

Following the scoping meetings, a set of project alternatives was developed to address comments and concerns expressed by the public and agencies.

A suggestion was made by the USFS, with agreement by the other agencies, to develop alternatives that would directly address the concerns of the public and agencies. The ID Team then separated into subgroups, including those with wildlife expertise and interests, those with safety/highway design expertise and interests and visual and recreation interests. Each group was then given the assignment of formulating a design alternative that would best represent and preserve their group=s interests.

As a result a AWildlife@, a AVisual@, a ASafety@, and a ARecreation@ alternative were developed. These were called the Resource-Based Alternatives. These alternatives were defined in terms of highway criteria such as lane widths, design speed, shoulder widths, etc.

This set of alternatives was presented to the public at a set of public open houses held in Dubois and Jackson. Additional comments were solicited and used to refine the project alternatives.

Alternatives Evaluation

It was also decided at the ID Team meeting that all four resource based alternatives would be carried forward through the EIS for comparison and analysis.

Areas of Difference

A table was formulated with each alternative and the associated design criteria that would be used such as design speed, shoulder widths, clear zone widths, and other considerations that would protect or enhance each resource.
When the table was tabulated it became apparent that there were only two areas of real difference, design speed and shoulder width. The wildlife and visual teams supported a 40-50 mile per hour design, the safety/highway design staff supported a 55 mile per hour design, and the recreation staff supported a transitional design speed where the two ends of the project would be designed for 55 miles per hour and the middle (higher elevation, mountain pass area, trail crossing area) would be designed for 45 miles per hour.

Concerning shoulder widths, the wildlife and visual staff supported 4 foot shoulders, and the safety and recreation people supported 8 foot shoulders.

Areas of Similarity

There were many areas of similarity including alignment (minor shifts were OK), clear zones (16-26 feet), travel lanes (two 12 foot lanes), right-of-way width, ditch shapes, sight distance, turn lanes, approaches, pullouts, parking areas, bridges and structures, staging areas, and fencing.

Hybrid/Preferred Alternative

The ID Team then decided to combine all of the resource alternatives into one hybrid alternative that would also be carried through the EIS that would best accommodate all of the resources and be most responsive to all of the Environmental and Project Objectives. A summary of that alternative follows:

- **$** Design Speed: 55-45-55 as proposed by the recreation people.
- **$** Clear Zone: will be the minimum distance for the design speed indicated in the WYDOT Roadside Design Guide.
- **$** Travel Lanes: Two 12 foot lanes.
- **$** Shoulders: will be 6 foot and reduced to 4 foot in passing lane locations.
- **$** Passing lanes: will be 12 foot lanes with 4 foot shoulders and will be located outside of sensitive area to the greatest extent possible.
- **$** Bicycle lanes: will be provided within the shoulder widths.
- **$** Ditches: will be AU@ shaped and will accommodate the Continental Divide snowmobile trail where currently located.
- **$** Sight distances: will be determined according to AASHTO standards with site specific review.
- **$** Turn lanes: will be provided at certain recreational facilities.
- **$** Pullouts: will be provided per coordination with the WGFD, USFS, and WYDOT to ensure that scenic, recreation and maintenance criteria are met.
- **$** Parking areas: will be provided according to the same criteria as pullouts.
- **$** Structures: bridges would remain on current alignment and additional snowmobile underpasses will be provided.

- $ Box culverts: will accommodate fish/amphibian passage.
- $ No new fencing will be provided.
- $ Retaining walls: locations, lengths, and heights will be determined in the DEIS to an appropriate level of design. Full geotechnical analysis will be done at the time of final design following the EIS. Aesthetics will be determined by site characteristics, geology and USFS review. Wildlife impacts will be reduced by minimizing lengths and heights of retaining walls and by benching above/below walls where appropriate.
- $ Staging/waste and borrow sites: locations will be identified in the DEIS and impacts determined.

A letter requesting concurrence on this hybrid alternative was sent to the member ID Team agencies. Those agencies with the ability/authority to concur in the alternative signed and returned the concurrence letters.

Conclusion

The Issues Based Alternatives approach described in this paper is a useful tool for streamlining the environmental process. It allows for alternative development by resource agencies with varying interests and promotes a collaborative consensus building process.